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NSWC Coastal Systems Station Omni-Directional Vehicle Technology Program

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Omni-Directional Vehicle Technology

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Objectives w/respect to Sea Basing:

- **Improve Productivity and Stowage Density in Sea Based Warehouse**
- **Improve Capability to Load Elevators and Negotiate Ramps, Particularly in Heavy Seas**
- **Improve Capability to Handle Long/Heavy Loads**
- **ODV Technology is Optimum for Automation/Robotics**

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Recent Accomplishments:

- **At-sea evaluation aboard the SS CAPE GIRARDEAU (T-AK 2029) (Feb 01)**

- **Land-based demonstration transporting a TEU through a small maze of containers arranged to represent an MPF(F) arrangement. (May 02)**

- **ODT shipped to Port Hueneme for 3-month dockside operational evaluation (Jan 03)**

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Planned Efforts:

- **Develop spec for implementing omni-wheel technology on an 8klb side-loading forklift (SLF)**
- **Fabricate/test prototype ODSLF**
- **Evaluate concepts for shipboard OD container mover (ODCM)**

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ODV Climbing Ramp on CAPE GIRARDEAU

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ODV w/ Missile Canister on USS ARCTIC (AOE 8) Elevator

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Demonstration of Omni Technology as a Container Mover

Conceptual Omni-Directional Side Loading Forklift (ODSLF) Configuration

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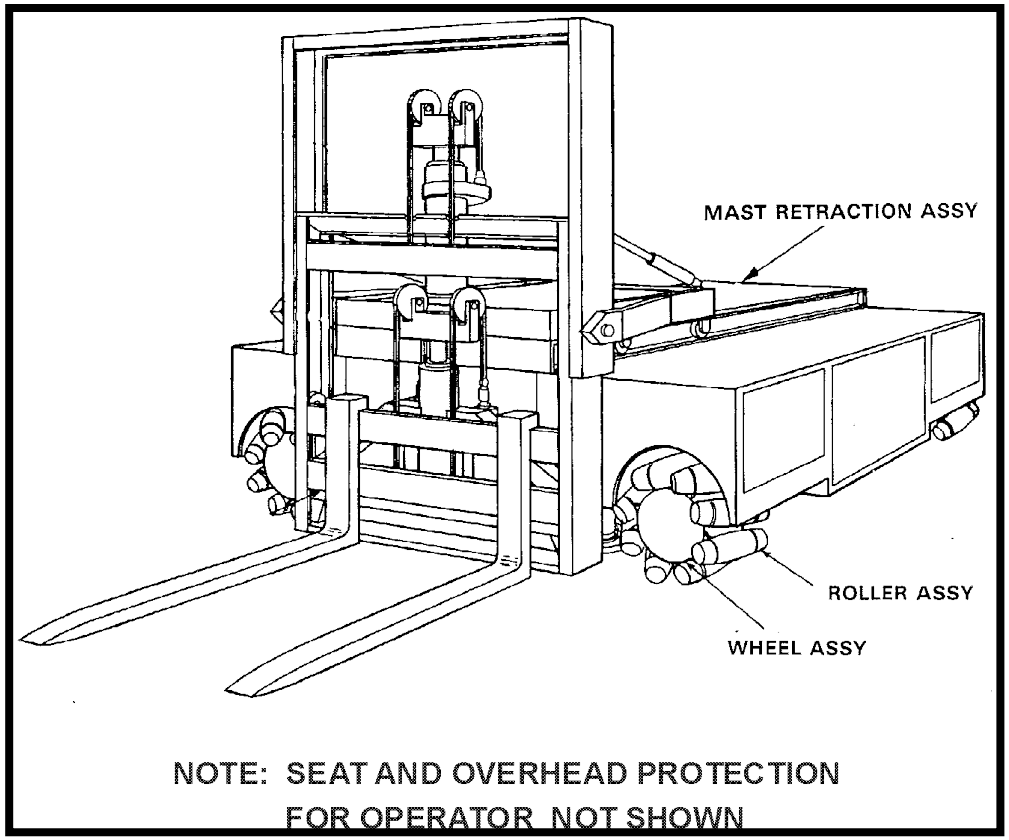
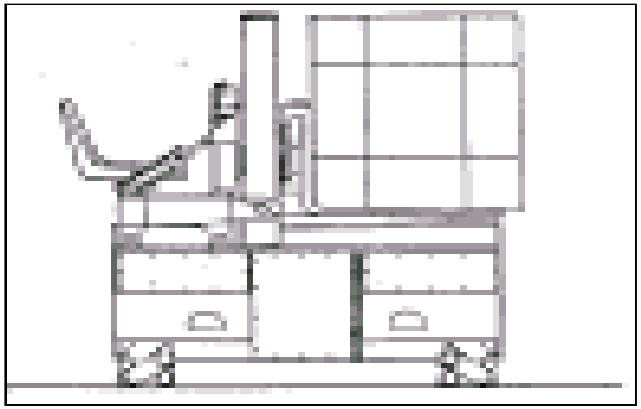
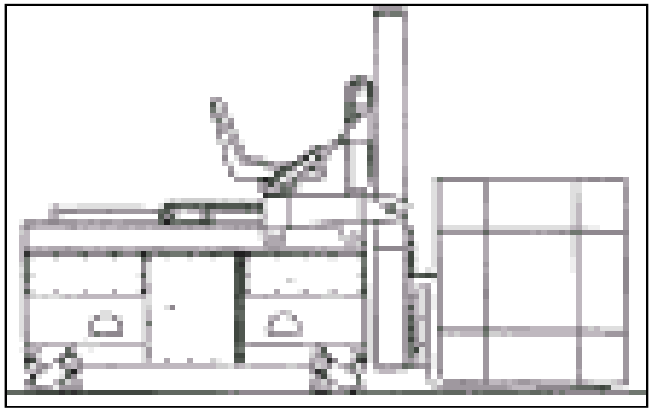


ODSLF IN TRAVEL POSITION



ODSLF LOADING



Fantuzzi Side Loading Forklift

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Fantuzzi Side Loading Forklift

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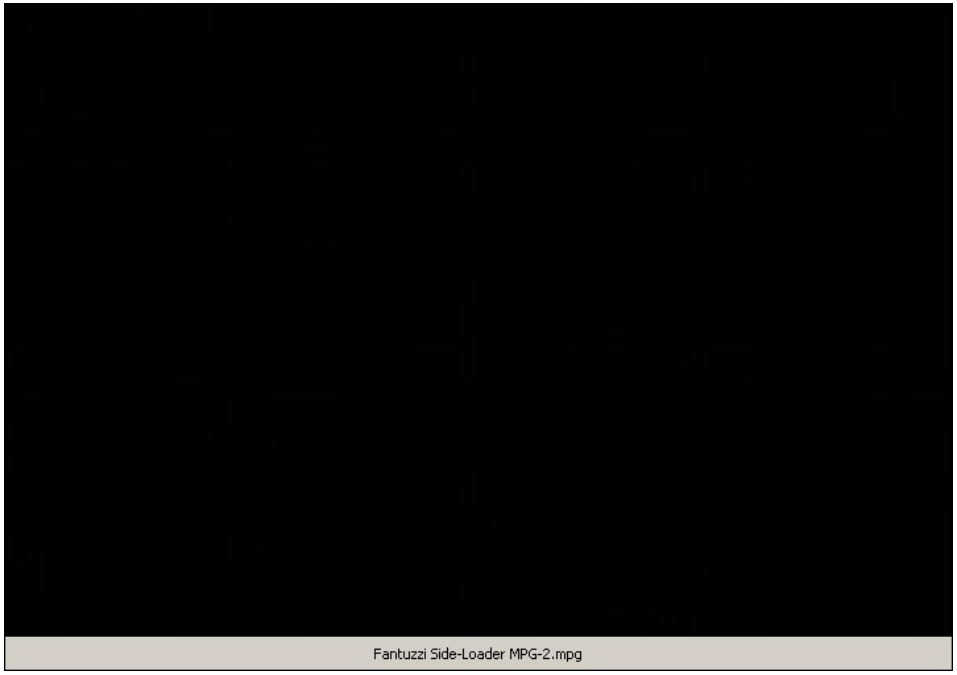

Demonstration of Fantuzzi SLF Capabilities

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Summary and Conclusions:

- **Demonstrated improved maneuverability (vs conventional FLT) in close areas will increase sea based warehouse productivity**
- **Linear maneuvering (versus turning) capability is ideal for automation/robotics**
- **FY03 effort focused on developing an ODSLF, with greatest benefit for moving long/heavy items**